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SUPPORTING DOCUMENT NO. 11

ITEM 8

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November 4, 2004

VIA FACSIMILE AND MESSENGER

Mr. John H. Robertus
Executive Officer
Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

Re: Supplemental Comments by Scripps Institution of Oceanography on Tentative Order No. R9-2004-0378; Reference IC: 12-018-02

Dear John:

The University of California San Diego ("UCSD"), Scripps Institution of Oceanography ("Scripps") submits this supplemental letter to its October 28, 2004 materials addressing the above referenced matter. It is important that Scripps is provided a reasonable period of time to achieve compliance with the effluent limits set out in Table B of the California Ocean Plan. The Table B objectives are proposed as numeric effluent limits and as receiving water quality objectives. Scripps recognizes that Table B limits must be included in the re-issued permit and at the same time Scripps requests that the Regional Board not impose the Table B effluent limits immediately, but rather that it continue the Scripps discharge limits set out in its existing NPDES Permit No. CA0107239, Order No. 99-83 until the interim limits are established and final limits can be met. This letter also addresses the October 26, 2004 comments submitted by Mr. Dominic Gregorio.

Introduction

Scripps has been discharging at its current location for almost 100 years. Scripps has been operating under an NPDES and waste discharge requirements ("WDR") for the past 30 years and in each instance the Regional Board found that it was not harming the San Diego Marine Life Refuge ("Refuge"), an area of special biological significance ("ASBS"). Previously, Scripps has complied with all of its permit conditions, including all existing and prior monitoring and reporting obligations. However, the data developed pursuant to those requirements is not sufficient to determine Scripps' current ability to comply with Table B effluent and receiving water quality limits. Scripps requests that the permit limits set out in

Order No. 99-83 be continued during a period of time when Scripps develops additional monitoring data to establish what it's current effluent and receiving water quality data is. By including a compliance schedule in the permit, Scripps would then be required to satisfy the Table B effluent limits as final limits under this permit. Such an approach would be consistent with the 19 conditions imposed upon Scripps by the State Board when they granted an exception to Scripps for its discharge into the Refuge.

I. Response to Comments by Dominic Gregorio, Environmental Scientist, Division of Water Quality, State Water Resources Control Board, Dated October 26, 2004 on This Tentative Order.

Comment 1. Mr. Gregorio indicates that the suspended solids limitation in Table A of the Ocean Plan is really designed for POTWs and not Scripps. Scripps concurs with Mr. Gregorio's comment, however it is concerned that the mathematical calculations related to establishing a maximum number are not considering the fact that Scripps has a combined stormwater and seawater discharge at some of its outfalls. Because Scripps at this point does not know what its suspended solids numbers are during storm events, it needs time to sample and develop that assessment and the data related to those events. This data can then be used to provide a reasonable potential analysis and appropriate interim limits until final effluent limits are imposed. Because Scripps is required to develop a stormwater management plan ("SWMP") and a feasibility plan to manage the return seawater, it may be that those plans will identify best management practices ("BMPs") and other solutions that will propose solids removal.

On the LimCalc conducted by Steve Saiz, he ran these calculations with a initial dilution factor of zero. Scripps believes that the 2:1 dilution factor should be applied to these calculations and would likely result in a different effluent limit.

Comment 2. Mr. Gregorio notes that since the effluent limits are already provided for in the Tentative Order and that it is confusing to include a monthly average in the MRP tables. He therefore suggests removing that third column in the MRP Tables. As an alternative, Scripps proposes that all of the effluent limits set out in the Tentative Order be included in Tables 1 - 4 of the MRP.

Comment 3. Mr. Gregorio proposes that "samples shall be collected from Outfall 004b during the filter backwash discharge." Because of the difficulty of coordinating the backwash and sampling events (the backwash is driven by pressure buildup on the system which occurs at random times), it is not possible to coordinate the sampling of effluents and the receiving water with the backwash events. Thus, Scripps suggest that this requirement be qualified by the words "if possible." Further, Mr. Gregorio refers to the "sand" filter backwash, however, Scripps may change the types of filters it uses and a new filter may not include sand. Therefore, Scripps recommends striking that qualifier.

Comment 4. Scripps notes that the bacterial monitoring for Outfall 003 was intended to apply only when "draining the marine mammal holding facility, when in use." Thus, if there are no marine mammals in the marine mammal holding facility (the Ring Tank) then this bacterial monitoring obligation would not apply.

Comment 5. Mr. Gregorio refers to sediment monitoring with a specific reference for the sediment toxicity amphipod test. Provided a qualified contract laboratory can conduct the specific methods, Scripps does not object to this change.

Comment 6. Concerning the monitoring station locations for the surf zone samples, Scripps may need to coordinate an adjustment to the proposed 1000 feet north and south of the pier to address access and safety factors.

II. Current, Interim and Final Limits.

On July 22, 2004, the State Water Resources Control Board ("State Board") granted Scripps an exception to the Ocean Plan for its stormwater and stormwater commingled with seawater discharges into the Refuge. See State Board Resolution No. 2004-0052. The State Board exception is conditioned on compliance by Scripps with its NPDES permit; and upon permit renewal, 19 conditions must be included in the permit. The 19 conditions in the State Board resolution for the most part do not specify the exact implementation time, however when one reads the resolution in its entirety it is clear that the State Board contemplated an allowance of a reasonable period of time for Scripps to achieve final compliance with the 19 conditions including compliance with Table B.

For example, in the Whereas provision of the Resolution, the State Board noted that the discharge of copper when used as a treatment additive in the Scripps open seawater system is undesirable and should be eliminated. At the same time, Condition 3-b provided that "the use of copper as a treatment additive in the open seawater system must be eliminated as soon as practicable; alternatively the discharge of copper additives must be eliminated as soon as practicable through the treatment of effluent prior to discharge." (Emphasis added).

In addition, the State Board, if it finds cause to revoke or reopen this exception, may do so during the Triennial Review or at any other time that it so desires. Therefore, not only is Scripps at risk of experiencing mandatory minimum penalties for any Table B effluent exceedance for both its seawater and stormwater discharges, but it is also at risk to have the State Board exception revoked.

Scripps believes that the following provisions further demonstrates the State Board's willingness to grant Scripps time to achieve compliance. Condition 3.a. provides that Scripps

must comply with water quality standards of the Ocean Plan which are defined as the preservation of the "natural water quality conditions." These natural water quality conditions "will be defined, based on a review of the monitoring data, by an advisory committee . . . ." The advisory committee must meet annually to review the monitoring data and to advise whether or not natural water quality is being altered in the ASBS as a result of the Scripps discharges. Thus, the water quality that is to be protected in the ASBS has not yet and will not be defined until sufficient data is developed and reviewed by the advisory committee. Since Scripps has never been required to develop receiving water quality in its previous permits, it does not know if the existing receiving water quality satisfies Table B or "natural" conditions. Providing a reasonable period of time to develop such data, to ascertain current conditions in this water body, and to achieve compliance is contemplated and appropriate in the establishment of the permit conditions.

3.b. provides that Scripps is to develop a feasibility study within six months of the date that the permit is reissued. This study must evaluate alternatives such as partial or complete diversion to the sewer, alternative treatment techniques, pollutant minimization, and source control to eliminate the discharge of copper, and to reduce the discharge of other antibiotics and treatment additives. The report must also include a discussion of alternatives, associated costs and feasibility of moving the waste seawater outfall to locations outside of the ASBS. Scripps is to act as soon as practicable, and to minimize other additives to prevent alteration of natural water quality in the receiving water. For Scripps to eliminate or treat the copper it needs time to conduct the feasibility study, to design, fund and implement the preferred alternative. Earlier this year, Scripps began a dialogue with the City of San Diego Wastewater Department to explore the option of diverting treated aquaria water to the sewer. This option held much promise for an early solution and Scripps thought it could be accomplished in the near future. Last week the City advised Scripps that the sewer pipes did not have the capacity to handle the diverted flow and that they would not have that capacity for at least five (5) years. (See Attachment 1.)

Because Scripps must treat seawater at the Birch Aquarium or it will kill some of the fish, including rare and endangered species (and possibly result in violation of other laws), it must have time to explore the development of an alternative system, especially now that diversion to the sewer is no longer an option. See Attachment 2, a description by the Birch Aquarium management relating to these consequences to the exhibit.

3.g. provides Scripps a six month period to develop a stormwater management plan/program ("SWMP"). This plan must describe the measures by which non-stormwater discharges will be eliminated and <u>interim</u> measures that will be employed to reduce non-stormwater flows until the ultimate measures are implemented. Clearly, the State Board contemplated an interim period of time for Scripps to achieve compliance by the provisions set out in this condition. Because Scripps has two outfalls which commingle stormwater/seawater

effluent it is subject to numeric effluent limits on its stormwater, as well as its industrial effluent at these discharge points, thus placing Scripps in a most difficult position. Unlike other stormwater-only dischargers into ASBSs, Scripps will not be able to take advantage of an iterative approach and to develop BMPs as a way to achieve wet weather compliance. This fact distinguishes Scripps from other dischargers who may obtain exceptions to the Ocean Plan in the future and places Scripps at risk of incurring mandatory minimum penalties.

As guidance to the Regional Board, Scripps notes that: The Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (the "Policy") provides for the development of data and the assignment of interim limits until final compliance is achievable. The Policy provides that the Regional Board shall issue Section 13267 or 13383 letters to all NPDES dischargers requiring submittal of data sufficient to calculate water quality-based effluent limitations. These information request letters "shall specify a time schedule for providing the data to the RWQCB that is as short as practicable but not to exceed three years from the effective date of this Policy." If the permit is reissued prior to the completion of the requirements, the schedule shall be included in the permit as interim requirements and the permit can be reopened to establish water quality-based effluent-based limits as necessary.

The Policy provides that the Regional Board use all available, valid, relevant and representative information to determine whether a discharger may cause or have a reasonable potential to cause or contribute to an excursion above any applicable priority pollutant criteria or objective. If the data is insufficient or unavailable, the Regional Board shall require additional monitoring.

Compliance schedules are allowed where the existing discharger requests and demonstrates that it is infeasible for the discharger to achieve immediate compliance with the criteria, or with an effluent limitation. The Regional Board may establish compliance schedules in the NPDES permit, except that such schedules may not be allowed for new discharges.

The schedule of compliance shall include a series of required actions to achieve the water quality effluent limitation. These actions shall demonstrate reasonable progress toward the attainment of the effluent limit and the schedule shall include a schedule of completion that reflects a "realistic assessment of the shortest possible time required to perform each task." The compliance schedule shall contain a final compliance date and deadlines to complete each action, and shall be accompanied by interim requirements. When a compliance schedule exceeds one year, interim limitations shall be included in the permit. Such compliance schedules shall not exceed five years to complete actions necessary to comply with the California Toxics Rule effluent limits.

Any interim numeric effluent limits must be based on current treatment facility performance or an existing permit limitations, whichever is more stringent. In the present case, Scripps needs to develop data to assist in determining whether current treatment of the existing permit limitations are more stringent.

Further, Scripps understands that the State Board is currently considering adding a reasonable potential analysis and provisions for data development and interim limits to the 2004 Ocean Plan amendments.

Thus, Scripps ask that the Regional Board allow Scripps to coordinate with staff to identify the number and type of additional monitoring data required. That staff review that data and assign interim limits and a three year compliance schedule for achievement of final Table B limits

Sincerely,

John J. Lormon

JJL/jgb
Attachments
cc: Paul Richter
Tom Collins

bcc: Hope Schmeltzer
Kimberly O'Connell
Suzanne Lawrence
Larry Oberti

Davis, Kevin M.

From: O'Connell, Kimberly [koconnell@ucsd.edu]
Sent: Tuesday, October 26, 2004 11:39 AM
To: Lormon, John J.; tcollins@ucsd.edu; Ron Van Boxtel; Suzanne Lawrence
Cc: Kozlak, Mary K.; Kendyl Goldston
Subject: FW: Hydraulic Capacity
Importance: High

Please read the email below regarding the sewer district's inability to take SIO's discharge w/out upgrading the piping.
-----Original Message-----
From: Robert Grigg [mailto:RGrigg@sandiego.gov]
Sent: Tuesday, October 26, 2004 9:04 AM
To: O'Connell, Kimberly; Oberti, Larry
Cc: Barbara Sharatz; Dave Nagel
Subject: Hydraulic Capacity

At my request, the MWWD Engineering Section performed a 2 day flow study to determine the current capacity utilization of the Pasea De Ocaso and La Jolla Shores Dr sewer gravity mains and Pump Station 27. Based on the flow measurements on the above listed sewer collection mains and the design guide for the collection system, no additional discharge is allowed for the following reason.

The actual flow measurements from the collection system segment from Man Hole 15 to Man Hole 279 (that feeds Pump Station 27) was 61.6% of design capacity which exceeds the 50% depth of flow limit. All other sections of the 2 sewer gravity mains and Pump Station 27 are able to handle more than 100 gpm of additional flow. However, please note that Pump Station 27 is scheduled for an upgrade and will be under construction that should be completed within the next 12 months.

According to the Engineering section, currently there are no construction projects planned to upgrade the undersized section of pipe (listed above). The engineer told me they plan to perform a second flow study to confirm that referenced section of pipe is above the critical flow limit. The engineer went on to explain that on a normal time line, if the flow is confirmed to be above the critical limit, The City will upgrade that section of pipe within the next 5 years.

I requested for the engineer to forward the results of the second flow study. I will forward those results to you when I receive them. If you have any questions give me a call (858) 361-8169.

Robert Grigg
Pretreatment Inspector

BIRCH AQUARIUM CHEMICAL TREATMENT NOTES

Present treatments

The Birch Aquarium at Scripps has cold water fish tanks and warm water fish tanks. The colder water tanks do not require chemical additives, such as parasite treatments with copper because the fish do not become parasitized nearly so much. The higher water temperature in the hotter systems causes both fish and their parasites to maintain a higher metabolic rate. This means parasites can develop rapidly and cause major health problems to the fish in warm water environments unless treated.

Many of the warm water tanks are small with smaller fish species. In these tanks any sick or parasitized fish can be removed for treatment in another tank that is isolated from the main water system so that the treatment water does not mix with outgoing seawater.

However, the large warm water tanks – the Aquarium's Mexican Gulf system tanks, which are maintained at a temperature of 75F, house much larger fish. Many of these larger fish are now very difficult to obtain. Some are on State and Federal protected lists (i.e. Broomtail Grouper, Mycteroperca xenarchi, and the Gulf Grouper, Mycteroperca jordani). Whenever possible sick specimens from the gulf system are removed for treatment in isolation. However this is very dangerous for the larger fish. It can be extremely difficult to move larger fish. These fast swimming fish are difficult to catch without the fish inflicting serious injury on themselves. Therefore there is a far greater chance of recovery from parasite outbreaks when the entire tank or system is treated. Normally the gulf system requires anti parasite treatment four times a year. The treatment consists of an initial dose of trichlorfon followed by a 21 regimen of copper sulphate and citric acid. Note temporary isolation of the gulf system water or filtration of the gulf system outflow during treatment is not possible without major redesign of the warm water life support systems (which means total re-plumbing).

Chemical discharge minimization

The following protocol changes have been implemented to minimize the amount of treatment chemicals that are discharged through outfall 1 before plumbing changes:

As stated above if at all possible specimens requiring treatments are removed from display tanks and treatments are performed in an isolated treatment tank. This not only means the treatment discharge is isolated from the main seawater discharge but also reduces the amount of chemical to be used because a smaller tank volume is being treated. After treatment, the specimen is returned to an appropriate holding tank. The discharge from the treatment is directed to sewer. As previously stated this only works for the smaller fish in the warm water tanks. Isolation is not possible for the large warm water fish.

Short-term treatments of other chemicals (formalin, etc and now all antibiotics) are only used in closed system (isolated systems) situations such as the quarantine systems. The discharge from these treatments are directed to sewer.

The number of treatments to the Gulf system has been limited to two times per year. This has greatly reduced the total chemical discharge to effluent. This reduction in dosing has already had detrimental effects on the fish. Some of the rare and valuable specimens maintained in this system have already died. Other fish have higher parasite levels than usual. This causes them to itch and rub affected areas causing sores. We think that lowering treatment any more could lead to loss of all the fish in these large tanks.

In the isolated quarantine system newly acquired specimens go through quarantine in water maintained at a lower salinity to reduce the chance of parasitic outbreak. Due to existing plumbing we cannot isolate the gulf system warm water tanks to lower salinity levels. The quarantine systems have tanks that can be isolated and therefore salinity lowered. Lowered salinity kills many marine parasites.
UCSD veterinary staff are involved with all treatment decisions to prevent any unwarranted medications of specimens and minimize chemical use.

Extensive redesign of the life support system – especially the warm water tanks – will lead to complete elimination of chemicals discharged in the seawater. Warm water systems that need dosing with chemicals for parasite treatments will be closed (isolated systems). This requires extensive redesign and replumbing of all the life support systems at the aquarium so that no chemicals and no non endemic species are discharged in the seawater. This will take approximately 3 years. Meanwhile we will minimize all chemical discharge in every way possible while maintaining high quality animal care.2